

Notice of Allowability

Application No.

10/705,994

Examiner

Bernard Rojas

Applicant(s)

KAWAI, HIROSHI

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 1/4/06.
2. ☒ The allowed claim(s) is/are 1-6, 8-10, 12, 13 and 15-18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 10072005 | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Allowable Subject Matter

Claims 1-6, 8-10, 12-13 and 15-18 are allowed.

The following is an examiner's statement of reasons for allowance:

Claim 1, the prior art of record does not teach nor suggest, in the claimed combination, an RF Mem switch comprising an upper member disposed above the movable element: and at least one fixed electrode disposed on the upper member; wherein when all of the plurality of movable electrodes are displaced in the direction away from the RF signal-conducting unit by the movable electrode displacing unit so as to be disposed at positions where a signal is switched on, conduction of an RF signal of the RF signal-conducting unit is switched on; when all the plurality of movable electrodes are displaced in the direction towards the RF signal conducting unit by the movable electrode displacing unit so as to be disposed at positions where the signal is switched off, conduction of the RF signal of the RF signal-conducting unit is switched off; and an electrical length of the RF signal-conducting unit sandwiched between the plurality of movable electrodes is set such mat an amplitude of a combined signal composed of RF signals reflected at positions of the RF signal-conducting unit facing the plurality of movable electrodes is less than an amplitude of each of signals reflected at positions of the RF signal-conducting unit facing the plurality of movable electrodes when the plurality of movable electrodes are disposed at positions where the signal is switched on.

Claim 6, the prior art of record does not teach nor suggest, in the claimed combination, an RF Mem switch comprising an upper member disposed above the movable element; and at least one fixed electrode disposed on the upper member; wherein the plurality of movable electrodes is disposed with a space provided therebetween in the direction of signal conduction of the RF signal-conducting unit; and the RF signal-conducting unit located between the plurality of movable electrodes defines a transmission line having a length that is less than or equal to a quarter of a wavelength of the conducting RF signal of the RF signal-conducting unit such that the RF signal-conducting unit located between the plurality of movable electrodes provides a characteristic impedance that is greater than a system impedance.

Claim 12, the prior art of record does not teach nor suggest, in the claimed combination, an RF Mem switch comprising a movable element displacing unit for displacing the movable element in a direction towards or away from a substrate via electrostatic attraction with a plurality of movable electrodes is disposed thereon; an upper member disposed above the movable element; and at least one fixed electrode disposed on the upper member, wherein the RF signal-conducting unit located between the plurality of movable electrodes defines a transmission line having a length that is less than or equal to a quarter of a wavelength of the conducting RF signal of the RF signal-conducting unit such that the RF signal-conducting unit located between the plurality of movable electrodes provides a characteristic impedance that is greater than a system impedance.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M-F 8-4:00), every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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